



# INTERNATIONAL SUGAR RESEARCH FOUNDATION, INC.

7316 Wisconsin Avenue, Bethesda, Maryland 20014

PHILIP ROSS, Ph.D., M.P.H.  
*President*

April 11, 1969

Dear Sir:

We are pleased to send you a copy of the International Sugar Research Foundation descriptive brochure, written by Mr. Neil Kelly, former President of the Sugar Association. The brochure will be sent to the executive officers of non-member sugar companies and associations around the world, to bring to their attention the purpose and scope of the ISRF and to interest them in becoming members.

If you would like to have additional copies, please let me hear from you.

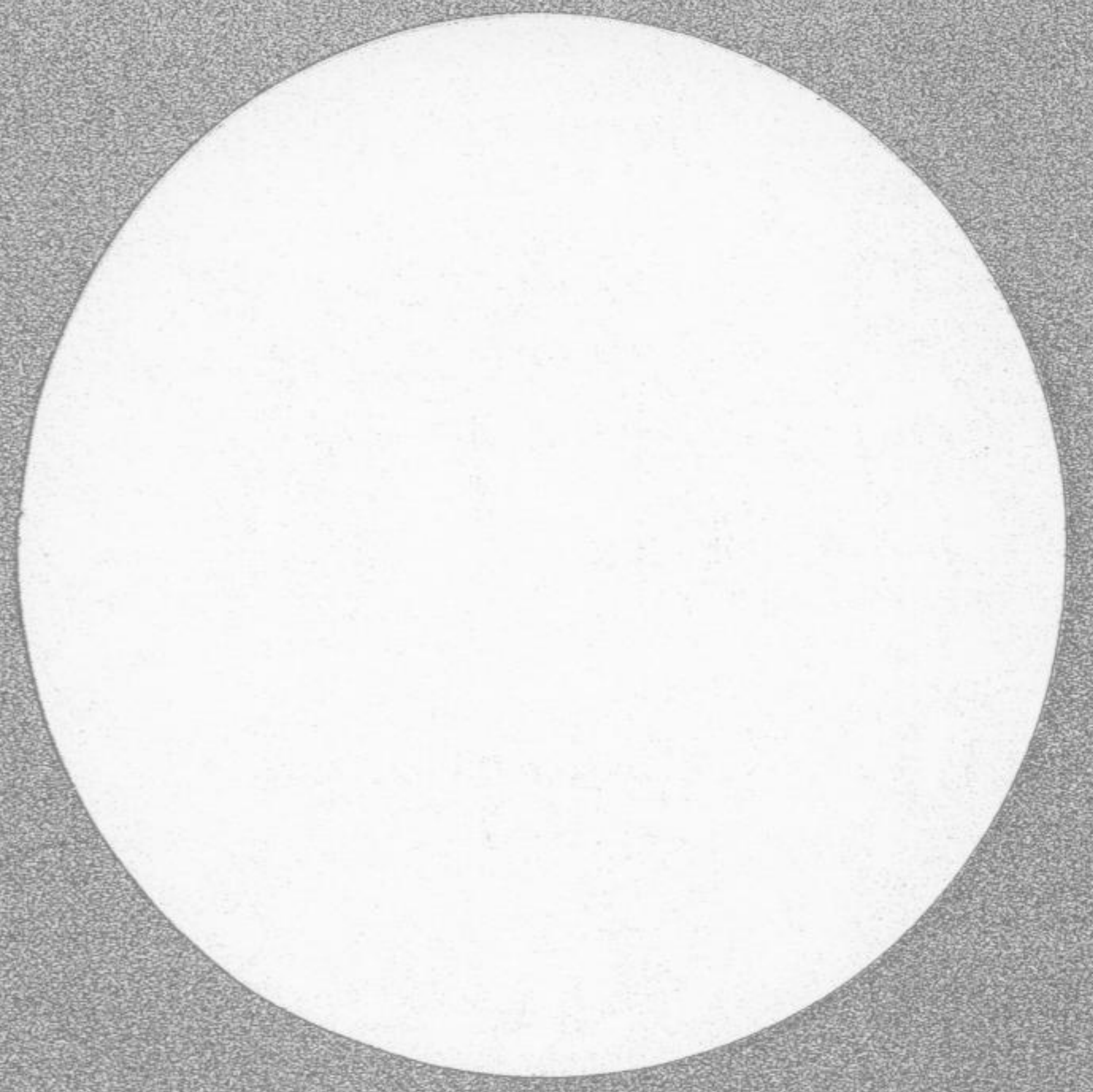
Sincerely yours,

Philip Ross, Ph.D.

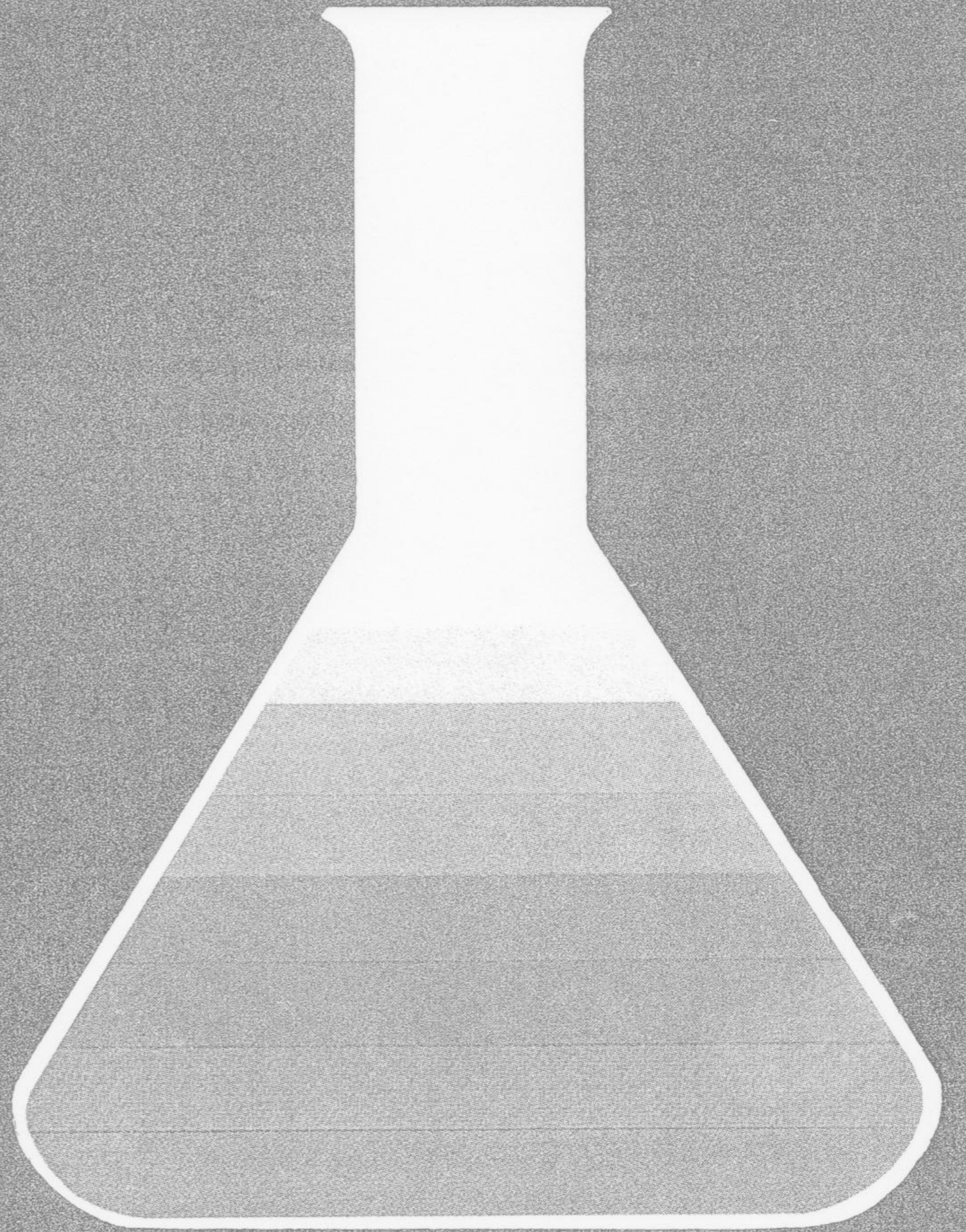
Enclosure

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# WHAT'S AT STAKE IN SUGAR RESEARCH?







**CAN NEW MARKETS  
BE FOUND FOR SUGAR?**

**ARE THERE HEALTH  
REASONS FOR RESTRICTING  
THE USE OF SUGAR?**

**CAN SUGAR'S  
COMPETITORS BE  
OUTFLANKED?**

These hard questions, and others like them, are matters of concern to sugar producers in more than sixty countries around the globe because the answers inevitably affect the well-being of the industry. Answers need to be found — and they must be rooted in solid fact. Nothing less is acceptable in a science-oriented world.

How are the answers to be found? Fortunately, the mechanism for fact-finding already exists in The International Sugar Research Foundation, Inc., a non-profit, membership corporation whose major objectives are these:

**1** To conduct research and investigations relating to the uses of sugar and other sweetening agents in foods and beverages, in non-foods, and as ingredients or raw materials in the chemical and manufacturing industries. (Implicit in these objectives is the study of the place and value of sugar in nutrition and public health.)

**2** To disseminate as widely as possible accurate information from the results of research with respect to the use, purpose, utility and effects of sugar and its competitors.



The International Sugar Research Foundation, Inc., was brought into being on July 1, 1968, as the successor to Sugar Research Foundation, Inc. The need for a formal program of utilization research was first recognized by producers contributing importantly to the sugar supplies of the United States. They became convinced that too little attention was being given to problems encountered in the marketing of their products and concluded that solutions could best be sought in cooperative efforts. As a consequence, Sugar Research Foundation was organized in 1943.

In the ensuing twenty five years, SRF gave financial support to nearly 280 research projects at educational institutions, hospitals and commercial laboratories in the United States, Canada, England, Scotland, Ireland, and the British West Indies. More than \$5,000,000 was spent in the work.

As the program developed, producers in other countries became active participants. Thus, at the time the Foundation was superseded by ISRF it had members in Australia, Belgium, Canada, Mexico, England, Ireland and South Africa, so that it was in truth operating on an international scale. In these circumstances, the organization of ISRF not only recognized existing conditions but, more important, made possible a much broader approach to the fundamentals in which sugar

producers everywhere have a common interest.

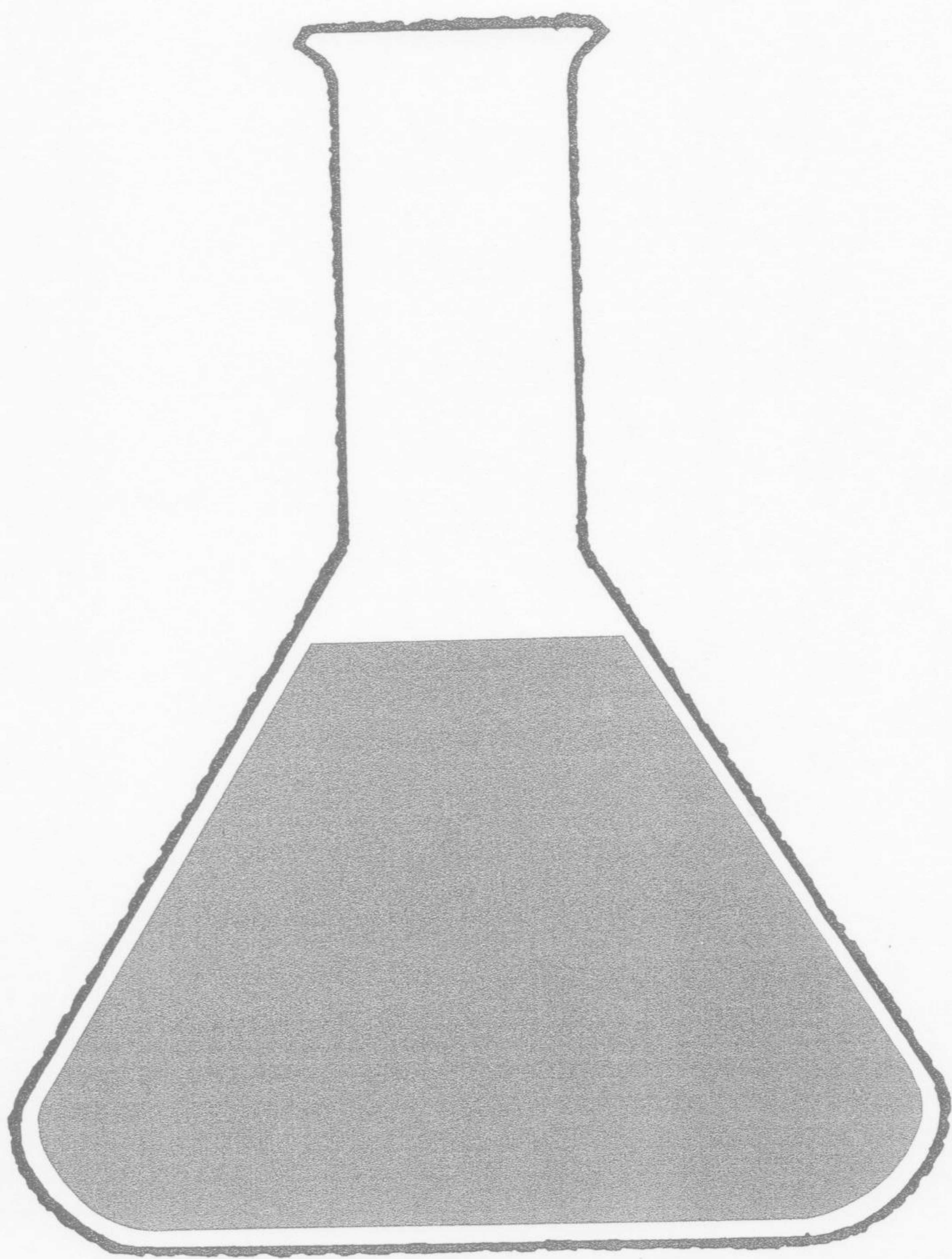
The studies undertaken by Sugar Research Foundation during a quarter of a century brought about the publication of more than 700 scientific and technical papers: a total which testifies to the scope and diversity of the program.

An important characteristic of the program is its flexibility, which makes it possible to attack problems of immediate urgency to meet the thrusts of competition. As an example, when it became apparent in 1964 that the synthetic sweeteners — cyclamates — threatened to displace significant amounts of sugar, top priority was given to the possible toxic effects of these products. Now, after four and one-half years and the expenditure of more than two-thirds of a million dollars, there is growing evidence that cyclamates are not safe for all people under all conditions of use. Largely because of these studies, both the manufacturers and industrial consumers of cyclamates have been forced to re-examine the nagging question of safety. Some industrial consumers have abandoned the cyclamates, and food authorities in a number of countries are reviewing the evidence to determine whether restrictions should be placed on their use. The United States Food and Drug Administration has sounded cautions about possible over-usage.



## RESEARCH PROGRAM

Since sugar's markets are overwhelmingly centered in human foods, the research program has always given major attention to the problems encountered in the production and use of commercially-prepared foods. Nevertheless, the possibilities of chemical applications of sugar have been explored, as well as the more effective use of by-products. The present program gives emphasis to nutrition and public health, food technology, sucro-chemistry and other non-food uses, and by-products.





## NUTRITION AND PUBLIC HEALTH

Nutrition and public health are basic themes in the ISRF program because it is in these fields that attitudes toward sugar are often shaped. Misconceptions concerning the causes of tooth decay, diabetes and heart problems exist on a worldwide basis. Three current projects will indicate the range of ISRF's involvement:

- Possible effects of diet on athletic performance is the subject of a project at the University of California. Preliminary findings indicate that distance runners do better when their diets contain generous amounts of sugar and cereals.

- Relationships between diet and cardiovascular disorders have engaged the interest of scientists for many years. More recent is the allegation by a minority of the possible relationships between dietary sugar and heart disease. ISRF supports studies of the topic in England, South Africa, and the United States.

- The feasibility of developing a serum to inhibit the incidence of dental caries is under investigation in England — a new approach to an age-old puzzle. (Earlier contributions in this field include participation in the development of strains of caries-susceptible laboratory animals, and studies having to do with the relationships between diet and decay potentials. Expenditures have exceeded a third of a million dollars.)

Other studies covered a broad spectrum: sugar in human metabolism, child nutrition, reducing diets, and degenerative diseases, to mention a few. A sterile invert sugar for intravenous feeding, developed in the program, is now administered routinely at many hospitals.





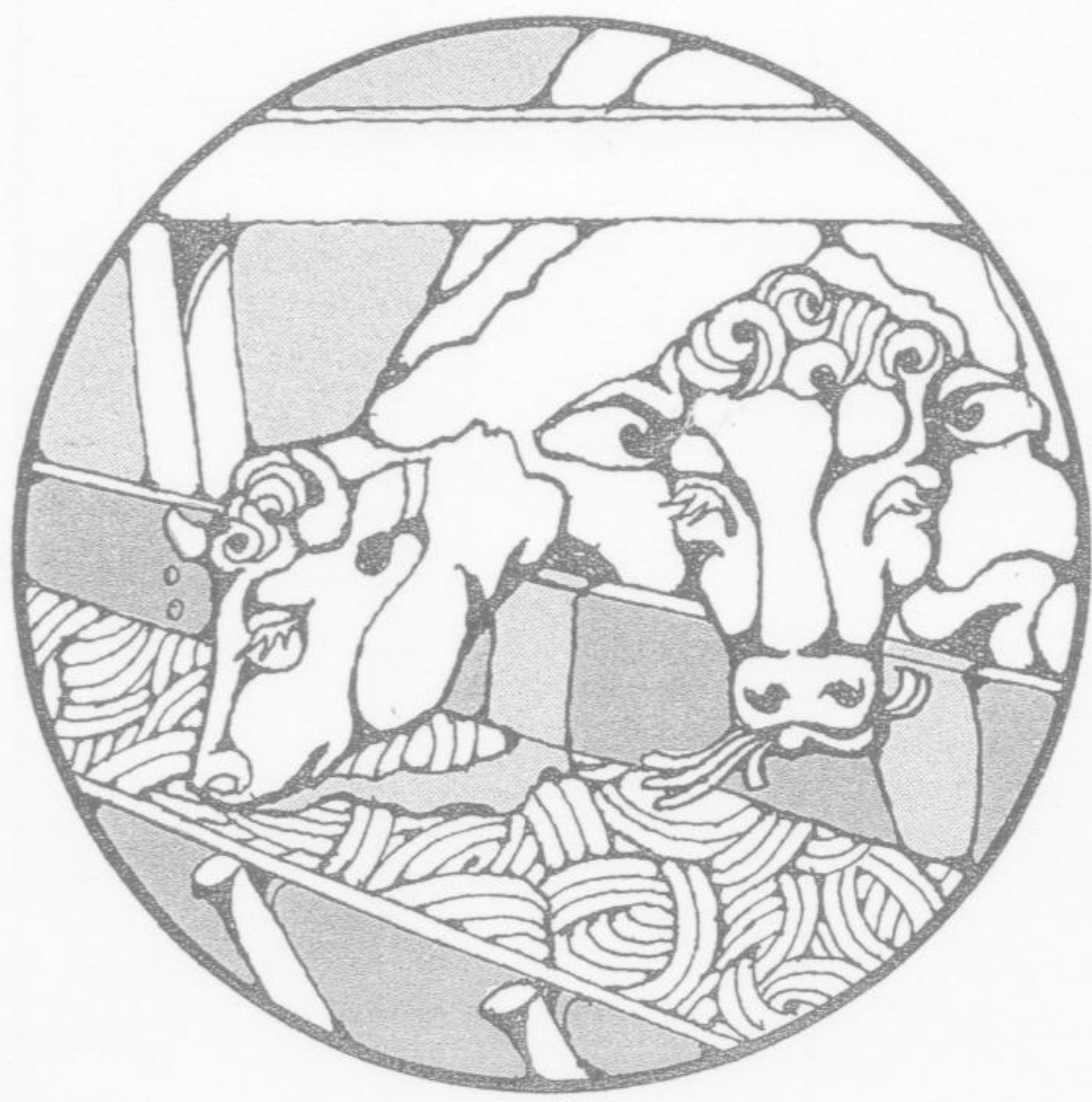


## NON-FOOD USES

Chemical syntheses based on sugar have been studied extensively, and the commercial development of products resulting from research is an accomplished fact. Noteworthy are the sugar ester surfactants, which exhibit superior qualities as detergents and also as emulsifiers and dispersing agents in foods, and as emollients and emulsifiers in cosmetics. The esters are tasteless, odorless and non-toxic. They are, moreover, completely biodegradable, a characteristic of primary importance in preventing foaming and water pollution resulting from the use of "hard" detergents.

Scores of other non-food uses have been investigated, ranging from animal feeds to plastics. Drying oil esters show attractive possibilities, and reactions of sugar, hydrogen and ammonia give chemical intermediates from which fibers, chelating agents and pharmaceuticals can be made.

The sugar industry's research in the non-food field has sparked investigations by independent agencies, and several commercially successful materials have been produced, among them furfural, surface active agents, and plasticizers.



## BY-PRODUCTS

Even though by-products research has not received major attention, studies have been made on molasses, bagasse, and sugar beet pulp. The treatment of beet molasses with ammonia improves its nutritional value for farm animals. Bagasse, after hammer-milling, is a suitable feed for cattle in areas where there is a shortage of forage. It is also used as a fiber in paper-making and in the manufacture of plastic molding compounds.



## FOOD TECHNOLOGY

Since an ever-increasing part of the world's sugar is marketed through commercially-prepared foods, the research program accents studies in food technology. Investigations have touched on dozens of products: baked goods, frozen desserts, canned fruits and vegetables, berries, meat and fish. Generally speaking, the results have been gratifying, notably in canned fruits. Here it was found that consumers consistently prefer products in which the sugar content is higher than in the standard commercial pack. Curiously, the preference is usually attributed to better fruit flavor rather than to the higher level of sweetness.

It is in commercially-prepared foods that corn syrup (glucose) is most competitive with sugar. As a consequence, continuing efforts have been made to establish the superior properties of sugar in these products. The theory — vigorously promoted by the manufacturers of glucose — that corn syrup and sugar may be used interchangeably has been effectively disproved. In most foods, only a limited amount of corn syrup can be incorporated without getting inferior flavors and unwanted variations in texture and color.

The potential outlets for sugar in commercially-prepared foods are almost endless. Studies of the possibilities continue as a major part of the program of The International Sugar Research Foundation, Inc.





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**Dr. Philip Ross**, first President, ISRF, was graduated from Brown University in 1949 with a major in botany, and two years later received a master's degree in zoology and entomology at the University of Massachusetts. After a year of teaching, he entered Oregon State College to work for a Ph. D. in plant ecology. Later he transferred to Harvard where he received an M. A. and Ph. D. in 1958.

Dr. Ross spent a year in Trinidad on a Fulbright Research Scholarship, then joined the United States Geological Survey in Washington as a botanist. In 1962, Dr. Ross accepted a position at the National Institutes of Health as Assistant Chief, Training Grants Section, National Institute of Dental Research, later becoming Chief of the Research Grants Section. In 1965, he joined the Office of International Research, NIH, where he headed the International Centers for Medical Research and Training, and served as Assistant Head, Special International Programs Section. Dr. Ross was selected for training at the Harvard School of Public Health where he earned a Master of Public Health degree in Demography and Human Ecology in 1968, and served as President of his class. Since 1959 Dr. Ross has been a professorial lecturer at The American University in Washington.

Dr. Ross was born in Newton, Massachusetts, on November 2, 1926. He is married and has two children. During World War II he served in the U. S. Navy for two years.



**Dr. John L. Hickson**, Vice President and Director of Research, ISRF, was graduated from Ohio Wesleyan in 1937. After a year at the University of Illinois as Graduate Assistant in Organic Chemistry, he spent eight years as a research chemist for the National Aniline Division of Allied Chemical & Dye Corporation at Buffalo, New York. He taught chemistry and physics for two years at Kansas Wesleyan and then entered Purdue, where he received a master's degree in 1952 and a Ph. D. in 1953. From 1953 to 1960 he was Assistant to the President of Sugar Research Foundation. In 1960 he became Vice President and Director of Research.

Dr. Hickson served as president and then Chairman of the Board of the American Institute of Chemists from 1966 to 1969, and past Chairman of the Carbohydrate Division of the American Chemical Society. He is also past President of the New York Association of Research Directors, past Secretary-Treasurer of the United States Commission on Uniform Methods of Sugar Analysis, and past Chairman of the Library Committee of The Chemists' Club.

Dr. Hickson was born in Milford, New Hampshire, on June 17, 1916. He is married and has three daughters and four grandchildren.